Elektronische Bauelemente

BCP559A

-3A, -180V

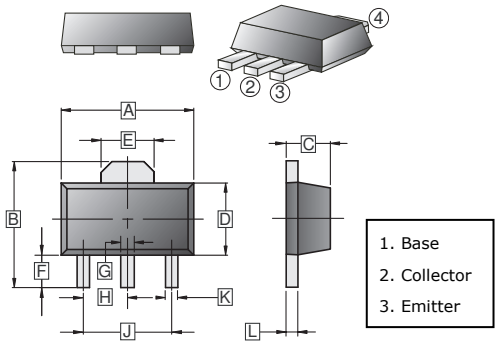
PNP Silicon Medium Power Transistor

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The BCP559A is designed for medium poweramplifier applications.

SOT-89

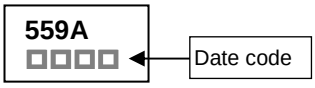


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4.60	G	0.40	0.58
B	3.94	4.25	H	1.50 TYP	
C	1.40	1.60	J	3.00 TYP	
D	2.30	2.60	K	0.32	0.52
E	1.50	1.70	L	0.35	0.44
F	0.89	1.2			

FEATURES

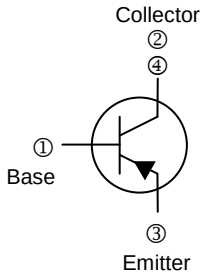
- Low collector saturation voltage : VCE(sat)=-0.5V(Typ.)
- RoHS Compliant Product

MARKING



PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-89	1K	7' inch



ABSOLUTE MAXIMUM RATINGS (T_A = 25℃ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V_{CBO}	-180	V
Collector-Emitter Voltage	V_{CEO}	-140	V
Emitter-Base Voltage	V_{EBO}	-7	V
Collector Current (DC)	I_C	-3	A
Collector Current (Pulse)	I_{CM}	-10	A
Collector Power Dissipation	P_D	0.6	W
		1.5 [1]	
		2.1 [2]	
Junction & Storage Temperature	T_J, T_{STG}	150, -55~150	°C

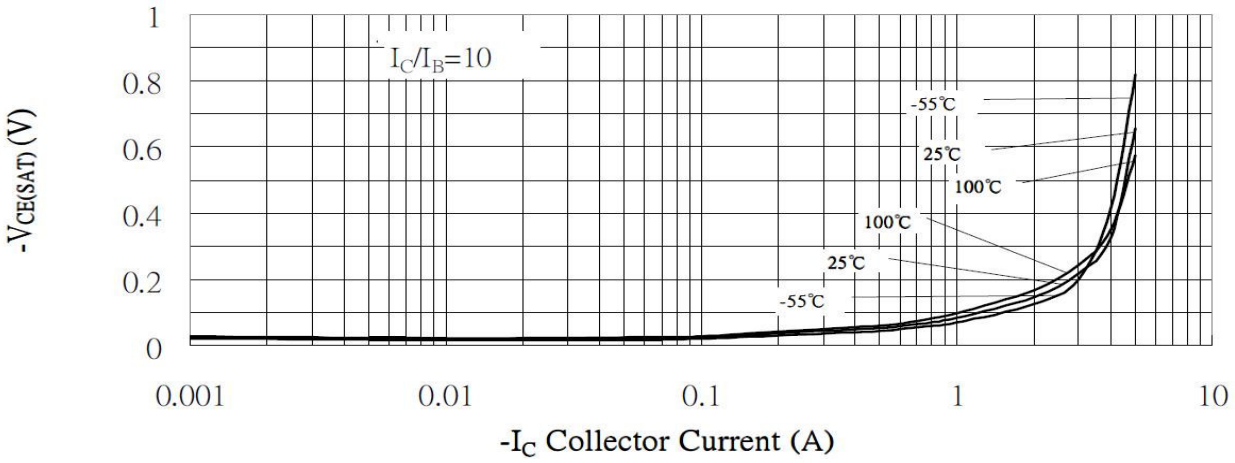
Note:
1. When mounted on FR-4 PCB with area measuring 25×25×1.6 mm.
2. When mounted on ceramic with area measuring 50×50×1.6 mm.

ELECTRICAL CHARACTERISTICS (T_A=25 °C unless otherwise specified)

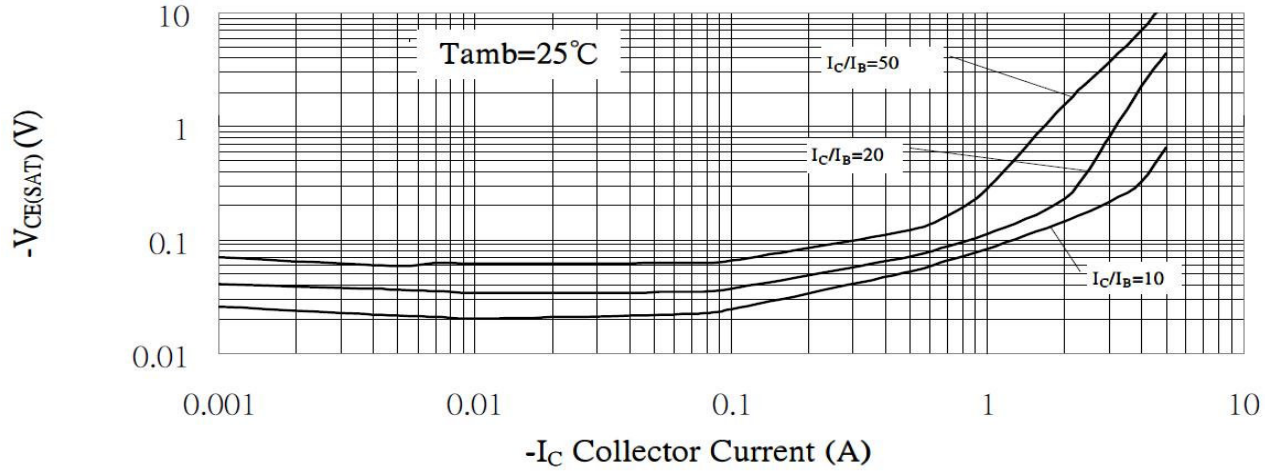
Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector - Base Breakdown Voltage		BV_{CBO}	-180	-	-	V	I_C= -100uA, I_E=0
Increased Operating Voltage		BV_{CER}	-180	-	-	V	I_C= -1uA, $R_B \leqq$1KΩ
Collector - Emitter Breakdown Voltage		BV_{CEO}	-140	-	-	V	I_C= -10mA, I_B=0
Emitter - Base Breakdown Voltage		BV_{EBO}	-7	-	-	V	I_E= -100uA, I_C=0
Collector Cut - Off Current		I_{CBO}	-	-	-50	nA	V_{CB}= -150V, I_E=0
		I_{CER}	-	-	-50	nA	V_{CB} = -150V, R $\leqq$1KΩ
Emitter Cut - Off Current		I_{EBO}	-	-	-10	nA	VEB= -6V, I_C=0
Collector - Emitter Saturation Voltage		$V_{CE(sat)1}$	-	-30	-60	mV	I_C= -100mA, I_B= -5mA
		$V_{CE(sat)2}$	-	-50	-75	mV	I_C= -500mA, I_B= -50mA
		$V_{CE(sat)3}$	-	-84	-115	mV	I_C= -1A, I_B= -100mA
		$V_{CE(sat)4}$	-	-220	-330	mV	I_C= -3A, I_B= -300mA
Base - Emitter Voltage		$V_{BE(sat)}$	-	-910	-1.01	V	I_C= -3A, I_B= -300mA
		$V_{BE(on)}$	-	-800	-0.9	V	V_{CE}= -5V, I_C= -3A
DC Current Gain		*h_{FE1}	100	225	-		V_{CE}= -5V, I_C= -10 mA
		*h_{FE2}	100	200	300		V_{CE}= -5V, I_C = -1A
		*h_{FE3}	45	-	-		V_{CE}= -5V, I_C = -3A
		*h_{FE4}	-	5	-		V_{CE}= -5V, I_C = -10A
Transition Frequency		f_T	-	120	-	MHz	V_{CE}= -10V, I_C= -100mA, f=50 MHz
Collector Output Capacitance		C_{OB}	-	33	-	pF	V_{CB}= -10 V, f=1 MHz
Switching Time	Turn-on	T_{on}	-	42	-	nS	V_{CC}= -50V, I_C = -1A, I_{B1}= -I_{B2} = -100mA
	Turn-off	T_{off}	-	636	-		

*Measured under pulsed condition. Pulse width = 300 us, Duty cycle $\leqq$ 2 %

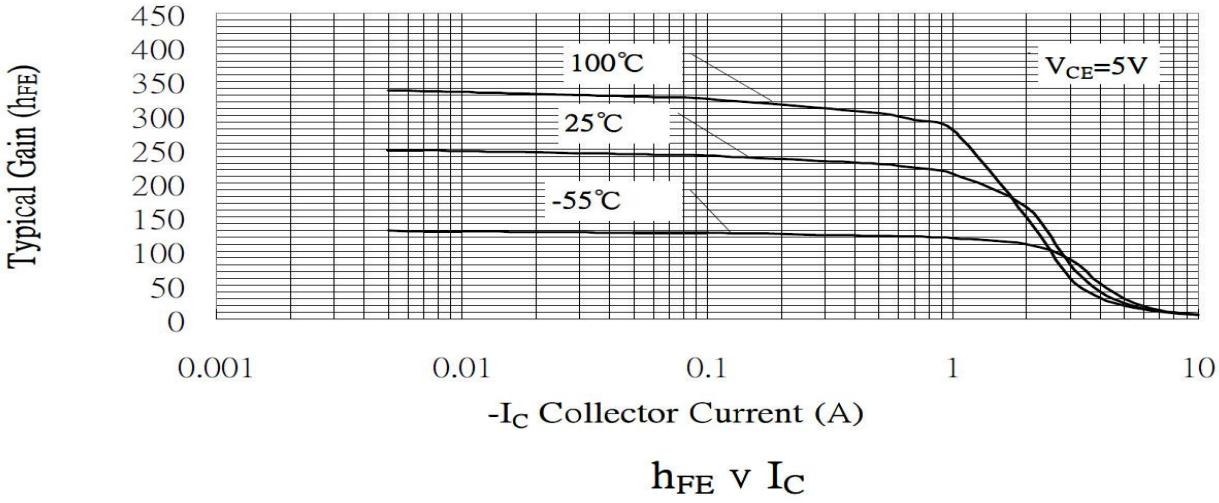
CHARACTERISTIC CURVES



$V_{CE(SAT)}$ v I_C

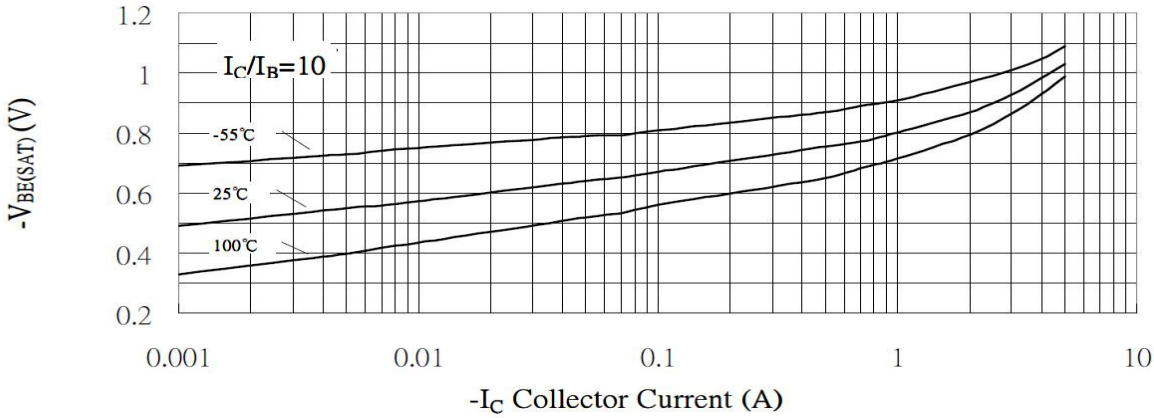


$V_{CE(SAT)}$ v I_C

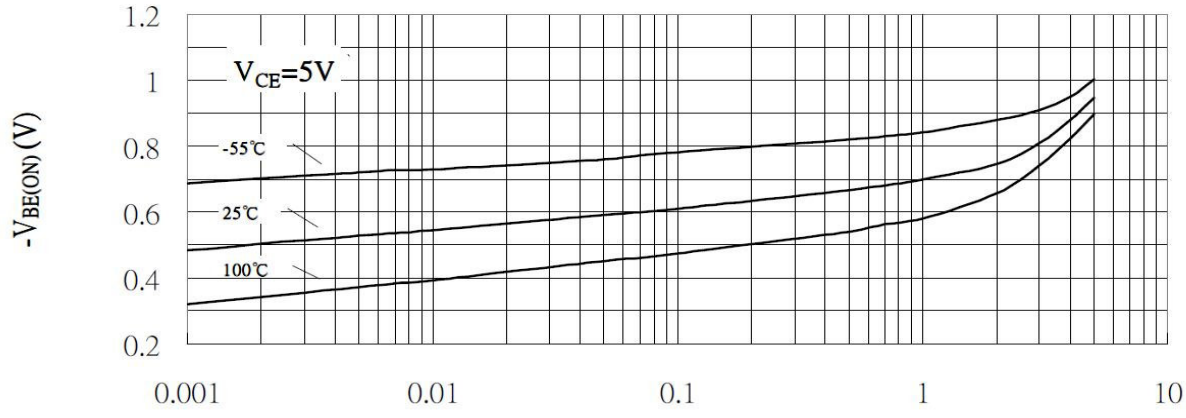


h_{FE} v I_C

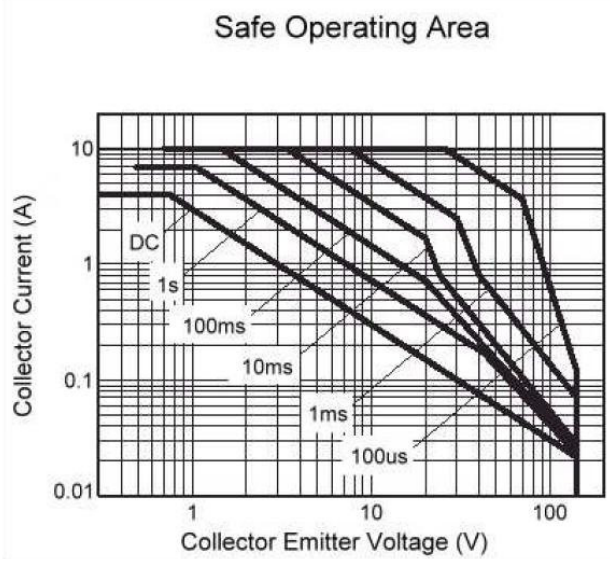
CHARACTERISTIC CURVES

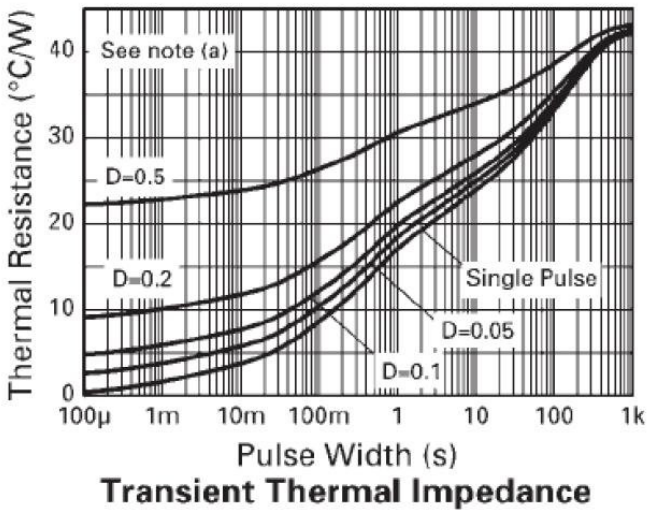


$V_{BE(SAT)}$ v I_C



$V_{BE(ON)}$ v I_C





Transient Thermal Impedance